SUBSURFACE FIELD SAMPLING PLAN DEVELOPMENT AND IMPLEMENTATION

Bossert Site - Phase II Site Code: 6-33-029 1002 Oswego Street Utica, New York

> New York State EQBA Title 3 Project

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1. Introduction

This document presents a scope of work for the development and implementation of a field sampling plan to evaluate the presence of subsurface, catch basin, and storm drain contamination that may be related to manufacturing activities and disposal operations at the former Bossert manufacturing facility (the Site) located at 1002 Oswego Street in the City of Utica, New York (Figure 1). The described scope of work, designated as the Initial Phase II Site Investigation, is a component of an on-going effort administered by the New York State Department of Environmental Conservation (NYSDEC) designed to investigate the nature and extent of contamination at the Bossert facility. The investigation requirements described herein are being conducted by NYSDEC under the 1986 Environmental Quality Bond Act.

In general, the following work activities will be required for the Initial Phase II Site Investigation:

- prepare a field sampling plan in accordance with the described scope of work
- collect concrete core samples from the floor of the former Bossert facility
- collect subsurface soil samples from beneath the concrete floor or from other areas as needed
- collect ground water samples from the boreholes
- properly contain and dispose of all waste materials generated during the collection of samples
- collect sediment and/or water samples from storm drains or catch basins in the vicinity of the Site
- prepare field logs and cross sections as needed
- collect stream or channel sediment or water samples as required

- properly document all work activities performed
- prepare an initial Phase II Site Investigation Report

At a minimum, sampling and investigation activities will be performed at the exterior of the facility. Work inside the facility is dependent on the structural condition of the building at the time that the work is performed and whether the work can be conducted safely.

1.1. Objectives

Polychlorinated biphenyls (PCBs) and metals, including mercury, are known to be present at the Site. Other process or waste residuals including acids, caustics, and volatile organic compounds may be present as well.

The primary objectives of the investigation are to:

- evaluate whether contaminants have penetrated into and through the concrete floor of the Bossert facility and, if so, whether or not the contamination has also spread laterally or vertically.
- 2. evaluate whether soils and ground water beneath the facility flooring and outside the facility have been impacted by contamination attributable to prior Site activities
- 3. determine whether process residuals have entered catch basins in the vicinity of the Site
- 4. maintain a record of the nature of the contaminants which may serve as a basis for future expansion of the subsurface investigation at the discretion of NYSDEC, the United States Environmental Protection Agency (USEPA), or the City of Utica
- 5. perform the field investigation with appropriate quality control/quality assurance (QA/QC) in a manner to support the collection of data that are legally and scientifically defensible.

1.2. Background

The Site consists of a former 210,000 sq. ft. manufacturing facility situated on a 6 acre parcel located in the City of Utica (Figures 1 and 2). From approximately 1896 to 1985, Bossert fabricated and welded sheet metal products such as brake backing plates and steel floor grates.

The Bossert facility, while in production, utilized PCB-containing oils in electrical transformers and in hydraulic presses. Manufacturing processes, waste disposal practices, and machinery salvage operations performed subsequent to facility closure reportedly resulted in the spread of PCB residues, which may have penetrated the concrete floor of the facility and possibly affected soils and ground water underlying the building. In addition, residues may also have entered the catch basins in the vicinity of the Site.

The Bossert Site is currently listed as a NYSDEC Class 2 Inactive Hazardous Waste Site in Oneida County, NYSDEC Region 6. NYSDEC has assigned Site Code 6-33-029 to the Site.

A detailed description of the history of the Site is summarized in the report entitled Site History-Bossert Site 1002 Oswego Street Utica, New York (Draft) dated January 1993. The reviewer is referred to this report for further information regarding previous investigations that have taken place at the facility. A condensed history is contained in the Bossert Site time line, which is included in the Phase I investigation Site Investigation Report and Associated Regulatory Requirements (September 1994). In addition to the Site History and Site Investigation Reports, an Analysis of Alternatives Report (December 1994) was also prepared as part of Phase I activities associated with the Site.

Additional investigative and background information is also maintained at the following document repositories

City of Utica Library 303 Genesee Street Utica, NY 13501 (315) 735-2279 Hours: M,W,TH-9am-9pm T &F - 9am - 5:30pm Sat - 9am - 5pm

- City of Utica, City Clerk's Office City Office Building, First Floor 1 Kennedy Plaza Utica, NY 13502 (315) 792-0117 Hours: M - F - 8am - 4 pm
- NYSDEC Region 6 Office
 Contact: Mr. Darrell Swerdoski
 State Office Building
 317 Washington Street
 Watertown, NY
 (315) 785-2236
 Hours: M- F 8:30am -4pm
 BY APPOINTMENT ONLY*

Inquires regarding the information maintained by these repositories can also be made to Mr. P. David Smith, P.E. or Mr. John Durnin, P.E. NYSDEC, 50 Wolf Road Albany, New York (zip code 12233-7010), at 518-457-5677 and 518-485-9285, respectively.

1.3. Format

This document contains the following sections:

- Chapter 1 Introduction
- Chapter 2 Health and Safety
- Chapter 3 Subsurface Investigation Plan Requirements

These sections define the Contractor scope of work for the subsurface investigation. The Contractor should note that these sections describe the Contractor's minimum responsibilities and are not designed to be all inclusive of the activities that may be involved in the investigation. In the event that the Contractor identifies additional activities that are necessary to perform the investigation, the Contractor shall immediately notify NYSDEC of the nature and scope of these activities prior to their implementation in the field.

2. Health and safety

The Contractor must perform the investigation in accordance with applicable provisions of Occupational Safety and Health Act (OSHA) 1910.120 entitled *Hazardous Waste Operations and Emergency Response*.

Prior to initiating work at the Site, the contractor must develop a health and safety plan (HASP) prepared in accordance with 1910.120 acceptable to NYSDEC for the work to be performed. The HASP must be submitted to NYSDEC for review at least 3 weeks prior to the scheduled work date. On-Site workers must be certified in accordance with OSHA 1910.120.

The Contractor will be responsible for maintaining Site security and health and safety during all Site investigation activities. The Contractor will also be fully responsible for all materials and/or equipment temporarily stored on -Site during this time frame. In addition, the Contractor shall be fully responsible for the proper disposal of all wastes resulting from the Contractor's Phase II Site Investigation activities.

3. Investigation plan requirements

The scope of work for the subsurface investigation consists of the development and implementation of an investigation plan to include:

- Appropriate data quality objectives, to be developed in consultation with NYSDEC.
- The collection of approximately 12 continuous concrete cores through the floor of the Bossert Facility; proposed coring locations are shown on Figure 2.
- The collection of continuous interior overburden samples to an approximate depth of 30 ft below the bottom of concrete at each boring location as directed by the NYSDEC Project Manager (note: when referencing the NYSDEC Project Manager, the term is also meant to include any person designated by NYSDEC to act in this capacity as a NYSDEC representative).
- The collection of 8 overburden samples at the exterior of the facility, the proposed locations of which are shown on Figure 3. Exterior overburden samples shall also be collected continuously to an approximate depth of 30 ft.
- The collection of one ground water sample from each boring, as directed by the NYSDEC Project Manager The Plan developed for these tasks shall also address equipment decontamination, spoils collection and containment, final off-Site disposal, and documentation procedures in accordance with applicable regulations and guidance. Sample collection, preparation, and documentation will be the responsibility of the Contractor. Sample packaging, shipment, and analyses will be the responsibility of the NYSDEC Project Manager.
- The collection of sediment samples from five catch basins as shown on Figure 3.

Final coring and boring locations will be selected in the field in consultation with the NYSDEC Project Manager. As noted earlier, interior

work is dependent on whether or not the building can be accessed safely at the time the work is performed.

3.1. Plan preparation

At a minimum, the Contractor's Subsurface Investigation Plan must contain:

- 1. The Contractor's procedures for obtaining concrete cores for evaluation by the NYSDEC Project Manager.
- The Contractor's procedures for continuous sampling of the overburden to an approximate depth of 30 ft below the bottom of concrete as directed by the NYSDEC Project Manager at the interior of the facility.
- 3. The Contractor's procedures for continuous sampling of the overburden to an approximate depth of 30 ft below ground surface as directed by the NYSDEC Project Manager at the exterior of the facility.
- 4. The Contractor's procedures for obtaining representative ground water samples at designated depths as directed by the NYSDEC Project Manager.
- 5. The Contractor's procedures to containerize collected soil samples using clean, labeled, wide-mouth jars.
- 6. The Contractor's Plan shall describe:
 - a. Data quality objectives for the investigation
 - b. Methodology and types of equipment to be used to obtain the concrete cores.
 - c. Methodology to be used to obtain overburden soil samples.
 - d. Methodology to be used to obtain ground water samples.
 - e. Methodology to be used to collect sediment samples from the catch basins.

- f. Procedures to containerize the collected soil samples. A number (currently estimated at three) of these samples will be selected by the NYSDEC Project Manager at each boring location for laboratory analysis. The NYSDEC Project Manager or his designee will be responsible for sample packaging, shipment, and analysis. The Contractor shall assist the NYSDEC Project Manager in the preparation of both soil and ground water samples for shipment.
- g. Decontamination procedures will be adequate to prevent cross-contamination among samples.
- h. Procedures to be used to collect and containerize spoils and other waste materials generated during performance of the work.
- i. Contractor's documentation procedures.
- j. An organizational chart illustrating personnel to be used during the field investigation program.
- k. Methodology to be used to develop a continuous geologic log of the overburden, including geologic cross-sections, ground water profiles, etc.
- 1. Standard procedures to be followed (such as, ASTM, USEPA, NYSDEC).

The sampling plan must be submitted to the NYSDEC Project Manager a minimum of 3 weeks in advance of mobilization for review and approval. In the event that the NYSDEC Project Manager disapproves the Plan, the Contractor shall revise the Plan to the satisfaction of the NYSDEC Project Manager prior to mobilization.

3.2. Concrete Cores

Concrete cores shall be obtained using standard ASTM methods capable of penetrating a minimum of 2 ft of reinforced concrete. Actual thickness of concrete must be determined in the field, may vary considerably between locations, and may be considerably thicker than two feet at some locations. Cores shall be a minimum of 4 inches in diameter. After the

concrete core has been obtained, it will be labeled by the Contractor and placed in a standard coring box provided by the Contractor for later examination by the NYSDEC Project Manager. More than one core may be placed in each coring box. The concrete core boxes shall be stored on-site at a secure location reviewed by the NYSDEC Project Manager. The concrete borehole shall be widened by the Contractor, if necessary, to collect the subsurface soil samples.

In the event that the Contractor proposes to use water during the drilling process, the water shall be obtained from a potable water source. Concurrence by the NYSDEC Project Manager shall be obtained prior to the use of water and the use of water shall be minimized. At a minimum, one sample of the potable water shall be sent to a qualified laboratory for analysis. No other drilling fluids or additives shall be used to advance the borings. In addition, lubricating oils or grease shall not be used on downhole equipment.

Excess cutting generated during the drilling process shall be removed from around the borehole and containerized in accordance with applicable State and Federal regulations and guidance for later shipment to an approved off-Site facility.

3.3. Subsurface soil and ground water sampling

Subsurface soil samples shall be obtained using a Geoprobe® or equivalent equipment. The soils are to be collected continuously using a suitable soil probe to obtain the soil samples.

The Contractor shall be responsible for obtaining accurate and representative samples. The Contractor shall provide new, clean, glass, wide mouth pint jars to collect a portion of each soil sample as directed by the NYSDEC Project Manager. Jars shall be labeled with the following data: Project; date of collection; hole number; type of sample; sample ID; top elevation of hole; depth of sample; and description of material. Excess soil shall be staged on clean plastic and returned to the borehole or to a container, at the direction of the NYSDEC Project Manager.

During drilling, the Contractor shall complete a drilling log which shall include the following: depth at which samples were collected, reference

point for all measurements, blow counts (if any) and percent recovery of split spoon soil samples (if used), depth at which each change in stratigraphy occurs, depth at which water was encountered, total depth of the completed soil boring, and any other pertinent information for a complete and accurate log. The Contractor shall inform the NYSDEC Project Manager of changes in drilling pressure or other pertinent information during the collection of soil samples.

One ground water sample shall be collected from each borehole as directed by the NYSDEC Project Manager.

3.4. Sediment sampling

Sediment samples shall be obtained using a dedicated trowel or similar collection device. If the contractor elects not to use dedicated sampling equipment, the collection device shall be decontamination using the procedures described in Section 3.5

Sediment samples shall be placed in clean, glass, wide-mouth jars. Jars shall be labeled with the following data: Project; date of collection; catch basin number, type of sample; sample ID; and description of material.

3.5. Decontamination

Coring, drilling, and sampling equipment mobilized to the Site shall be decontaminated prior to initial use. Decontamination shall consist of steam cleaning of the entire coring and drilling apparatus and associated sampling equipment to the satisfaction of the NYSDEC Project Manager.

Coring and downhole drilling and sampling equipment shall be decontaminated by non-phosphate detergent wash, potable water rinse, and steam cleaning between coring and soil sampling locations. All drilling and associated sampling equipment shall be decontaminated. The Contractor shall make efforts to reduce the amount of water generated during decontamination.

Decontamination shall be conducted at one or more locations as specified by the NYSDEC Project Manager. The Contractor shall construct a decontamination pad at the specified location(s) for the containment of decontamination water and spoils resulting from decontamination activities. Decontamination water and spoils shall be containerized in appropriate containers supplied by the Contractor for testing prior to disposal. At the conclusion of work, coring and drilling equipment, tools and materials, and the entire drill rig shall be decontaminated by steam cleaning prior to removal of such equipment from the site.

Sampler probes and non-dedicated sampling equipment shall be decontaminated by the Contractor after each use. The decontamination procedure shall include:

- 1. non-phosphate soap and potable water wash
- 2. potable water rinse
- 3. distilled water rinse
- 4. 10% nitric acid rinse for stainless steel equipment
- 5. 1% nitric acid rinse for carbon steel equipment
- 6. distilled water rinse
- 7. methanol rinse
- 8. air dry or nitrogen blow out
- 9. distilled water rinse
- 10. wrap sampling probes with aluminum foil or plastic to prevent contamination of the samples.

Chemicals used in the decontamination process such as nitric acid and methanol shall be contained on-site and disposed according to applicable regulatory requirements. All waste materials and unused chemicals shall be removed from the Site for reuse, recycle, or proper disposal at the completion of work.

3.6. Containment, handling and storage of spoil materials

Concrete core and soil boring cuttings shall be collected and stored in appropriate containers, furnished by the Contractor, for disposal The cuttings shall be managed and disposed in accordance with the latest revisions of the following codes, standards:

- 1. 40CFR Part 261 Identification and Listing of Hazardous Waste.
- 2. 40CFR Part 761 Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions.
- 3. 6NYCRR Part 371 Identification and Listing of Hazardous Waste
- 4. 6NYCRR Part 372 Hazardous Waste Manifest System and Related Standards for Generators, Transporters, and Facilities.

Concrete core and soil borings cuttings shall be tested prior to disposal at a suitable receiving facility permitted to accept the cuttings based on the sample results. At a minimum, two representative samples must be collected from the cuttings and analyzed by the following methodologies:

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- PCBs by USEPA Method 8080
- 2. Toxicity Characteristic Leaching Potential by USEPA Method 1311 for volatiles, semi-volatiles, metals, and PCBs.

Additional testing shall be performed at the direction of the receiving facility or if directed by the NYSDEC Project Manager.

The Contractor shall compile and furnish all manifest and disposal records to the NYSDEC Project Manager. Final payment will not be made until all waste and unused materials have been removed from the Site and properly disposed. Complete, accurate, and legible documentation of all waste disposal activities must be provided to the NYSDEC Project Manager.

3.7. Boring closure and survey

At the completion of sampling, each boring (except those designated as monitoring wells) shall be filled with a cement bentonite grout mixture level with the concrete floor. The Contractor shall also provide vertical and horizontal "as-built" survey information for each boring, documenting the amount of grout mixturefused to fill the boring. Vertical data shall be in feet mean sea level (MSL) elevation referenced to a known United States Geological Survey datum. Horizontal control shall be referenced to the New York State plane coordinate system, Central Zone and to the Bossert Plant Site grid system.

An "as built" base map shall also be prepared at the completion of the Phase II Site Investigation field activities showing the actual final locations of all soil borings and other field activities.

3.8. Data validation

If data quality objectives for the investigation, as presented in the Contractor's Plan, require data validation, data will be validated according to appropriate USEPA or NYSDEC requirements. If data validation is performed, the results will be incorporated into a discussion of data useability in the Phase II Site Investigation Report (see Section 3.8, below).

3.9. Draft and final phase II site investigation reports

A draft Phase II Site Investigation Report will be prepared and submitted to NYSDEC for review and comments. The report will describe the objectives, methodology, and results of the site investigation. Based on sample results, the report will also present conclusions with respect to appropriate or applicable regulatory cleanup standards or guidance. A data useability assessment will also be included in the report. If data validation is performed (see Section 3.7, above), only validated data will be used in the discussion of results and the presentation of conclusions. Upon receipt of one round of comments from NYSDEC, the report will be revised and submitted to NYSDEC as the Final Phase II Site Investigation Report.

References

- Analysis of Remedial Alternatives Bossert Site, Site Code 6-33-029, Phase I, 1002 Oswego Street, Utica, New York; O'Brien & Gere Engineers, Inc., December 1994.
- Work Plan Bossert Site, Site Code 6-33-029, Phase I 1002 Oswego Street, Utica, New York; O'Brien & Gere Engineers, Inc., November 1993.
- Site Investigation Report and Associated Regulatory Requirements Bossert Site Phase I, Site Code 6-33-029, 1002 Oswego Street, Utica, New York; O'Brien & Gere Engineers, Inc., September 1994.

